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## NOTES AND COMMENTS.

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### CONSUMPTION AT HEALTH RESORTS.

DURING a recent visit to the hotels in the Adirondacks and many other health resorts in this country, I was greatly impressed with the slight attention paid to the prevention of the communicability of consumption, which physicians now consider an established fact. Many of my friends and patients have told me that while visiting these resorts they could not help feeling nervous about catching consumption when they saw so many persons around them suffering from this disease.

For this reason I think the time is opportune for the public to be placed in possession of some definite information on this subject, which will give them an opportunity to judge intelligently of the possibilities of infection, and by their influence to insure that the proper precautions are taken to make it quite safe to inhabit the buildings and occupy the rooms their unfortunate consumptive brethren have used.

It is now generally believed by the medical profession that consumption is caused by a specific agent, which if implanted in suitable soil will multiply, develop, and produce the condition known as consumption. This agent is called the bacillus of consumption, and is a minute rod-shaped body belonging to one of the numerous families of bacteria. It is a recent discovery of the microscope. Its development and entire life-history have been carefully studied and are well known. It has been proved by many observers that the bacilli, if injected into animals, will produce consumption; a like result will be produced if they are allowed to inhale air or take food containing the bacilli. No direct experiments could, of course, be made to prove that this communicability extended to the human race; nevertheless, a wonderful combination of circumstances has arisen which makes it almost a certainty that this is the case, and that it is effected in the same ways.

It is only a few months since the entire civilized world was filled with anticipation and wonder by Dr. Koch's discovery for the cure of consumption. Nothing in medicine or surgery ever created so much excitement, and hope was entertained that at last the disease which causes about one-fifth of the deaths of the human race had found its master, and in future would be robbed of all its terrors. In the early days of this "craze" the celebrated German physician, Professor Virchow, warned the profession against the indiscriminate use of this remedy, as he believed that, in place of curing the sufferers from consumption, it disseminated the disease through the body and hastened its course. He was immediately accused of jealousy of Koch, and the craze and injection went on. At this time the composition of the Koch remedy was known only to a few physicians in Germany, and the physicians in other countries depended entirely on their faith in Koch, who had an established reputation for reliability and truth. As soon as Virchow's opinion became known, a few observers endeavored to prove the truth or

fallacy of his statement, and it was not long before they added their warnings to that of Virchow. There was an immediate reaction when this was announced; for every physician began to have fears, when he learned that Koch's remedy was the product of the bacillus of consumption, that possibly he was only adding fuel to the fire in resorting to its use. Subsequent events have proved the truth of this to a great extent, and there are few physicians who believe in the efficacy of this cure for consumption; but its discovery and use have suggested strongly the possibility of inoculating consumption.

That consumption can be communicated to the lower animals by causing them to inhale air impregnated with bacilli, I have already said, has been proved by experience. To repeat these experiments on the human subject is impracticable, but one case is on record in which the disease was unquestionably taken by inhalation. Tappenier was making some experiments on the possibility of communicating consumption to dogs by causing them to inhale the atmosphere of a room impregnated with its bacilli. His servant, a man forty years old, and free from all hereditary or personal taint, had been cautioned against entering this impregnated room. But in a spirit of bravado he did so many times. He was taken sick, and after an illness of fourteen weeks died; on post-mortem examination it was found that he had the same form of consumption as the dogs that died from exposure in the chamber.

Another remarkable instance is the case of the Fugeans, amongst whom consumption was unknown until a missionary and his wife went to reside there. The latter was suffering from consumption. She took some of the children from their savage state and clothed them and did all she could to educate them. After a short time acute consumption developed amongst these children and many died; but not a single case occurred amongst the children who remained in their savage surroundings.

Many similar instances could be reported from medical literature, were this the proper place to do it. The accumulation of such evidence is becoming so great that every physician of experience feels forced to share the belief in the communicability of consumption. There are also few physicians who have not had one or more cases that for years they have thought had been contracted in this way. One reason why this fact of communication from one to another cannot be more closely followed up by physicians is that patients change their places of residence and their physicians so frequently that it is impossible to obtain that detail of the life-histories which will connect them together.

How else than by communication are we to account for the rapid spread of consumption amongst savage nations, where this disease was unknown before civilized people began to visit them? This is true of our own American Indians, the inhabitants of Central Africa, and many other people. Intermarrying, or any other condition which might make hereditary transmission a possible cause, certainly could not account for its rapid progress. Besides, some of the best observers and investigators believe that consumption is not hereditary, and there is much evidence in favor of this view.

With such evidence of the possibility of inhaling the bacilli, the question would naturally be asked, How do the bacilli get into the atmosphere, when they are not found in the breath of sufferers from this disease? We know positively that in these cases bacilli are present in the mucus which is raised after coughing. In its moist condition it is impossible for it to be inhaled, but when it dries and becomes dust, it is blown about, and it is in this form that it becomes dangerous.

That this is true can easily be proved by examining the dust or scrapings from the walls or furniture of a room which has been occupied by a consumptive. They will contain the bacilli, and if inoculated into animals, or if animals are made to inhale them, they will produce consumption. Some idea of the number of bacilli which each sufferer must dispose of can be formed from an observation made by Heller. He estimated on a slide under the microscope 1,000,000 germs in a cubic millimetre of the sputa of a consumptive; and from this he further estimated that 300,000,000 bacilli were thrown out at each expectoration. This I think rather high; but it is certain that the number thrown out at each successful cough is very great.

Why some people contract consumption while others subjected to the same exposure escape, we are at present unable to say definitely. We only know that consumption follows the law of all diseases, and that it has a power of selection and needs a suitable soil in which to implant itself.

I think it has been shown that the evidence of the communicability of consumption from one person to another is very strong. The conditions necessary for this communication have also been shown. It should, therefore, not be difficult to answer the query so often made, How can consumption be avoided by those who are susceptible to its bacilli?

*First*—Every physician who has patients suffering from consumption should instruct them wherein the danger lies to others as well as themselves; for it is not impossible for a consumptive to reinfect himself by uncleanly habits. Consumptives should be impressed with the importance of a proper disposal of the sputa, and effectual means should be employed to prevent its conversion into dust.

*Second*—The proprietors of hotels in health resorts for these guests should add two or three rules to the ones they have already posted in their bedrooms, and I can safely leave them to the imagination. Suitable cuspidors should also be provided, which should contain a non-smelling disinfectant, and they should be emptied and cleansed morning and evening regularly. It should be made imperative and stand as an unwritten law that cuspidors should always be used. The bedding or any other linen about the room should be removed and cleansed before any sputa on it could become dry. When a guest leaves the hotel, the walls, floor or carpet, and furniture of the room he occupied should be wiped off with a damp cloth. This would be little more trouble than the present method of dusting and cleaning the room, and would take really no more time. Most of the bacilli would in this way be removed from the room, and a new guest would enter it without danger.

Free ventilation should also be amply provided for. All such precautions are carried out in hospitals and places where consumptives reside which are under medical supervision, and this accounts in a great measure for the remarkable escape from consumption of the nurses and attendants in these institutions. The best Adirondack hotels at the present time do carry out some of these suggestions, but still there is room for improvement. The part the general public should take in this matter of precaution is, by the force of their opinion to make it absolutely imperative that proprietors of hotels in health resorts for consumptives should take the precautions referred to, so as to meet the prevailing belief in the communicability of consumption.

This article is not intended to unduly alarm the public, but simply to bring to their appreciation the position they occupy towards this interesting and important subject. Their position is clearly this: that while the great majority can expose themselves with perfect safety to the possibility

of inhaling the bacilli of consumption, there are others who would be running some risk. With this knowledge in our possession and the means in our power of reducing the danger to a minimum, it is plainly the duty of everybody to assist in making these suggestions operative. When this is done, there can be no doubt that the number of consumptive cases will be very materially lessened.

WALTER F. CHAPPELL, M. D.

### HENRY CLAY ON NATIONALIZING THE TELEGRAPH.

THE correspondence, note-books, and private papers of Alfred Vail have lately been deposited in the National Museum at Washington. Mr. Vail was the inventor, in connection with Professor S. F. B. Morse, of the electric telegraph, and it was his mechanical knowledge and inventive genius that gave practical shape to Professor Morse's ideas. Vail was associated with Morse as his partner, and his money constructed the first available Morse instrument and brought about its exhibition before Congress.

These Vail papers show that Vail was a partner of Morse in inventive brain and push, as well as in money. They exhibit hundreds of his own drawings designed for the improvement of the telegraph, and his note-books sparkle with suggestions. It was he who exhibited the machine before Congress in connection with Morse in 1838, and it was he who received the first message over the wires after they were built from Washington to Baltimore. In his papers may be read the whole history of the origin of the telegraph, and the correspondence includes many letters from noted men as to its use and its probable effect upon business and the country. Some of these deal with the question of the government control of the telegraph and show that the sentiments both of the inventors and of the greater statesmen of the time were in favor of the United States Government owning and operating the new invention. This opinion was generally expressed at the time the telegraph was first shown to the Congressional Committee on Commerce in the Capitol at Washington. Mr. Vail's letter describing this exhibition has never been published. It is written to his father and is as follows :

"WASHINGTON, D. C., CAPITOL, ROOM COMMITTEE ON COMMERCE, }  
February 13, 1838. }

"MESSRS. S. VAIL & SON :

"The Committee on Commerce have just witnessed the operation of the machine with entire satisfaction, and the effect which it produced, I think, is the forerunner of success in our object. They have just left the room after giving Professor M. instructions how to proceed, and they speak of it as a serious thing whether the government take it under their control, or corporations. Mr. Smith, the chairman, said it would do immense mischief if it were not under the government. They advised Professor M. to invite all of the members of Congress and heads of departments to witness the operation of the machine prior to introducing the subject before the House. This course will be taken by us. I have prevailed upon Professor M. to use the dictionary which he has done with complete success. But had he used the alphabet, it would have been a different story. I could not induce him to give up the alphabet until the last hour, so reluctant was he. The proposition will be to try a circuit from Philadelphia to New York. The members of the committee think that would be best, and Professor M. is to give his proposals written. From all I can now see I fear I will not be able to leave this week—perhaps not the next. I am looking every day for a letter from you with means. I have only about ten dollars, half of which is specie and which I do not wish to part with. The House was in an uproar all day yesterday upon a resolution which Mr. Wise offered on